

# A new genus and species of leucosiid crab (Crustacea, Decapoda, Brachyura) from the Indo-Pacific Ocean

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Galil B. S. 2001. — A new genus and species of leucosiid crab (Crustacea, Decapoda, Brachyura) from the Indo-Pacific Ocean. *Zoosystème* 23 (1) : 65-75.

## ABSTRACT

A new leucosiid genus, *Raylilia* n. gen., is established for four species: *Arcania gracilipes* Bell, 1855, *Arcania mirabilis* (Zarenkov, 1969), *Arcania uenoi* Takeda, 1995, and *Raylilia coniculifera* n. sp. The new genus is distinguished from *Arcania* Leach, 1817 in having the basal antennular segment sealing antennular fossa, anterior margin of the efferent branchial channel medially fissured, the posterior margin of the carapace tridenticulate, the third to sixth segments of the male abdomen fused and bearing a preapical tubercle, and the first male pleopod distally expanded. A key to the species is presented.

## RÉSUMÉ

Un nouveau genre et une nouvelle espèce de crabe Leucosiidae (Crustacea, Decapoda, Brachyura) de l'océan Indo-Pacifique.

Un nouveau genre de Leucosiidae, *Raylilia* n. gen., est établi pour quatre espèces : *Arcania gracilipes* Bell, 1855, *Arcania mirabilis* (Zarenkov, 1969), *Arcania uenoi* Takeda, 1995, et *Raylilia coniculifera* n. sp. Le nouveau genre se distingue d'*Arcania* Leach, 1817, par plusieurs points : le segment basal antennulaire ferme la fosse antennulaire, l'extrémité antérieure du canal branchial efférent est fissurée, l'extrémité postérieure de la carapace possède trois denticules, les segments 3 à 6 de l'abdomen chez le mâle ont fusionné et possèdent un tubercule préapical, enfin le premier pléopode est élargi distalement. Une clé des espèces est présentée.

## MOTS CLÉS

Crustacea,  
Decapoda,  
Brachyura,  
Leucosiidae,  
*Raylilia* n. gen.,  
Indo-Pacific,  
new genus,  
new species.

## INTRODUCTION

The French MUSORSTOM expeditions to the environs of New Caledonia have collected a rich trove of benthic macrofauna. Through the courtesy of Alain Crosnier, the important collection of leucosiid crabs have been made available for study. While preparing a revision of the genus *Arcania* Leach, 1817, specimens of *A. mirabilis* (Zarenkov, 1969) and *A. uenoi* Takeda, 1995, were identified, greatly extending the geographic range of these species. This in addition to a new species. Comparison of these species with their presumed congeners showed that they possess enough distinctive characters to merit establishing a new genus, *Raylilia*. Smaller-sized leucosiids have been relatively overlooked and are poorly known. Both *A. gracilipes* Bell, 1855 and *A. uenoi* were described from single specimens, *A. mirabilis* – from three specimens; only 13 specimens have been previously recorded for all three species. In this paper we describe the new genus, redescribe these three species, review earlier records and describe a new species from New Caledonia and Indonesia.

### ABBREVIATIONS

MNHN	Muséum national d'Histoire naturelle, Paris;
NHM	Natural History Museum, London;
QM	Queensland Museum, Brisbane;
USNM	National Museum of Natural History, Smithsonian Institution, Washington D.C.;
WAM	Western Australian Museum, Perth;
ZMA	Zoölogisch Museum, Amsterdam;
ZMK	Zoologisk Museum, København.

Measurements refer to carapace length.

## SYSTEMATICS

### Family LEUCOSIIDAE Samouelle, 1819

#### Genus *Raylilia* n. gen.

TYPE SPECIES. — *Arcania gracilipes* Bell, 1855, by present designation.

OTHER SPECIES. — *Arcania mirabilis* (Zarenkov, 1969); *Arcania uenoi* Takeda, 1995; *Raylilia conicalifera* n. gen. n. sp.

ETYMOLOGY. — The genus is named after Dr Ray Manning and his wife, Lili Manning.

DIAGNOSIS. — Carapace globose, rounded. Dorsal surface of carapace bearing obtuse or conical tubercles, lateral margin of carapace denticulate, posterior margin tridenticulate. Intestinal region inflated, demarcated by shallow grooves. Front prominent, bilobed. Orbital margin trisutured. Postorbital region concave. Basal antennular segment sealing antennular fossa. Basal antennal segment inserted in inner orbital hiatus. Anterior margin of efferent branchial channel projecting, medially fissured, visible from in dorsal view. Third maxilliped exognath slightly shorter, more slender than endognath, merus half as long as ischium.

### DESCRIPTION

Chelipeds long, slender, fingers long, more than half as long as chela, cutting edges unevenly spinulate, tips cross. Pereiopods slender, short, dactyls granulate, setose.

Abdominal sulcus deep, nearly reaching buccal cavity. Male abdomen with third to sixth segments fused, narrowing distally, bearing preapical tubercle, telson one fourth as long as fused segments. Adult female abdomen with fourth to sixth segments fused, greatly swollen.

Male first pleopod with stout basal stalk, flanged on interior margin, bearing slender, setose appendix distally on external margin; tip lamellate, flared. Male second pleopod short, distally scoop-like.

### REMARKS

*Arcania* Leach, 1817 has rounded, pyriform or rhomboidal carapace; its dorsal surface is granulate, spinulate, or tuberculate, and the intestinal region bears a single spine or tubercle. The posterior margin of the carapace is bispinose or bidenticulate. The front is bilobed and uptilted. The antennules are obliquely folded, and do not close off the antennular fossa. The antennular basal segment is lodged in the orbital hiatus. The outer orbital margin is trifissured, the inner orbital margin cleft; the infraorbital lobe is spiniform, prominent, and fused with the bidentate anterior margin of the efferent branchial channel. Third maxilliped endopod bears a vertical row of setae in females. The chelipeds are slender and elongate. The male abdomen has segments third to fifth fused, lacking a preapical tubercle; the adult female abdomen is greatly swollen, segments fourth to sixth fused, the telson laciniate. The

first male pleopod is slender and elongate, sinuous or straight.

*Raylilia* n. gen. is distinguished from *Arcania* Leach, 1817 in having basal antennular segment entirely sealing the antennular fossa, the anterior margin of the efferent branchial channel medially

fissured and separated from orbital margin by a deep groove, the posterior margin of the carapace tridenticulate, third to sixth segments of the male abdomen fused and bearing a preapical tubercle, and the first male pleopod distally expanded, lamellate.

#### KEY TO *RAYLILIA* N. GEN. SPECIES

- 1a. Two midlateral marginal denticles ..... 2
- 1b. Three midlateral marginal denticles ..... 3
- 2a. Dorsal tubercles obtuse, first male pleopod distally trilobate ..... *R. mirabilis*
- 2b. Dorsal tubercles conical, first male pleopod distally petaloid ..... *R. uenoi*
- 3a. Dorsal tubercles fungiform ..... *R. gracilipes*
- 3b. Dorsal tubercles flat-topped ..... *R. coniculifera* n. sp.

#### *Raylilia coniculifera* n. gen. n. sp. (Figs 1; 2)

TYPE MATERIAL. — Holotype, New Caledonia, Lagoon, stn B 6, 22°18.15'S, 166°29.5'E, 15 m, 11.II.1985, 1 ♂ 9.8 mm (MNHN B19169). Paratypes, East Lagoon, stn 664, 21°43.9'S, 166°29.4'E, 28-30 m, 8.VIII.1986, 1 ♂ 7.9 mm (MNHN B18206). — Stn 669, 21°40.5'S, 166°26.2'E, 30-40 m, 8.VIII.1986, 1 ♂ 8.4 mm (MNHN B18385). — Stn 723, 21°21.6'S, 165°56.7'E, 45 m, 12.VIII.1986, 1 ♂ 9.2 mm (MNHN B18383). — Stn 728, 21°20.6'S, 165°52.4'E, 43-47 m, 12.VIII.1986, 1 ♀ ovi 12.6 mm (MNHN B18201). — Stn 876, 20°35'S, 164°50.7'E, 30-70 m, 13.I.1987, 1 ♂ 7.2 mm (MNHN). — Stn 976, 20°35.0'S, 164°50.7'E, 30-70 m, 13.I.1987, 1 ♂ 8.0 mm (MNHN).

Banc de Touho. 20°44.20'S, 165°14'E, 51-59 m, 15.IX.1993, 1 ♂ 8.9 mm, 1 ♀ ovi 12.2 mm (MNHN).

Sunda str. Java Sea, Indonesia, 6°38'S, 105°21'E, 35 m, 30.VII.1922, 1 ♂ 6.1 mm (ZMK).

Kei I. Banda Sea, 5°36'S, 132°55'E, 85 m, 9.V.1922, 1 ♀ 10.2 mm (ZMK).

ETYMOLOGY. — From Latin, *conicus*, small cone, for the cones crowding the dorsal surface of the carapace.

DISTRIBUTION. — New Caledonia, Indonesia, 15-85 m.

#### DESCRIPTION

Dorsal surface of carapace paved with flat-topped granules. Frontal lobes tumid, anterior margin shallow arch. Margin of carapace bearing 11 sub-equal, granulate denticles: three close-set denticles on midlateral, posterior margin; single denticle on subhepatic margin, subhepatic denticle largest. Dorsal surface of carapace bearing 16 conical, prominently granulate tubercles. Hepatic tubercle somewhat dorsoventrally flattened, pointing distad. Mesobranchial tubercle as long as intestinal tubercle, obliquely directed. Anterior intestinal tubercle smaller than posterior tubercle.

Anterior margin of efferent branchial channel unisutured, interior lobe medially notched. Third maxilliped bearing flat-topped granules.

Chelipeds merus in adult male longer than carapace, thickly set with rounded granules; carpus, propodus minutely granulate. Pereiopods minutely granulate.

Sternites closely set with rounded granules. Plastron with rounded, knob-like projections laterally. Abdominal segments granulate.

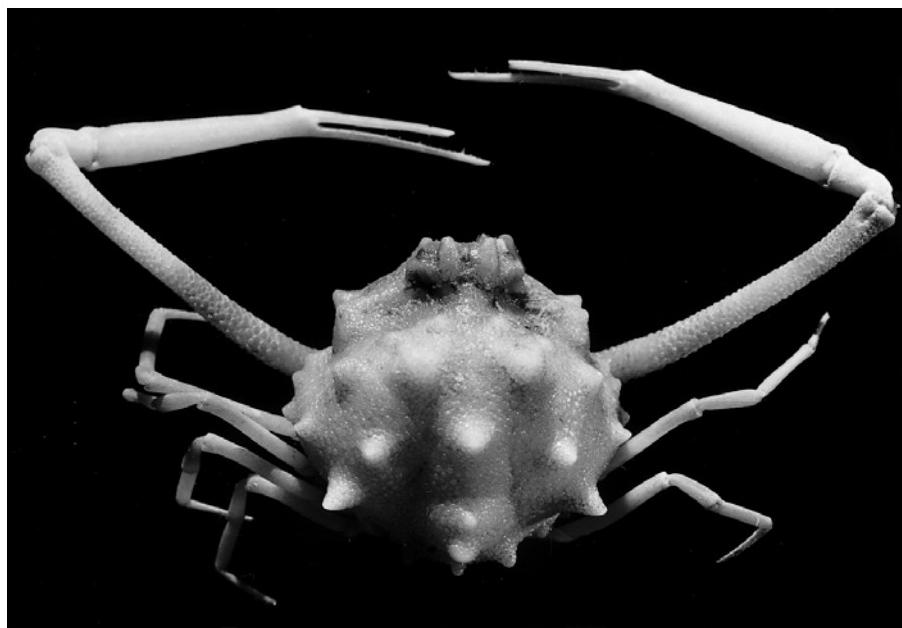


FIG. 1. — *Raylilia coniculifera* n. gen. n. sp., 1 ♂ 8.9 mm, Banc de Touho, 20°44.20'S, 165°14'E (MNHN), dorsal view.

Male first pleopod with basal stalk stout, internal flange rounded, disto-external appendix robust; anterior margin sinuous, proximal angle minutely denticulate.

#### *Color*

Dorsal surface of carapace pale orange, intestinal tubercle white; chelipeds pale orange, merus with two red bands.

#### REMARKS

*R. coniculifera* n. gen. n. sp. is distinguished from the closely allied *R. gracilipes* in having carapace set with flat-topped granules, and distal margin of first male pleopod sinuous, proximally denticulate.

#### *Raylilia gracilipes* (Bell, 1855)

(Figs 3; 4)

*Arcania* Adams & White, 1848: 53 (part).

*Arcania gracilipes* Bell, 1855a: 367; 1855b: 310, pl. 34, fig. 9; 1855c: 21. — Haswell 1880: 58. — Ihle 1918: 262. — Serène 1968: 45 (Not Calman 1900: 28 [= *R. mirabilis*]. — Not Alcock 1896: 270).

*Zarenkovia mirabilis* — Chen 1996: 283, fig. 12.

TYPE MATERIAL. — Designated here as lectotype, Indonesia, off Borneo, H.M.S. *Samarang*, 44 m, coll. A. Adams, pres. Capt. E. Belcher, 1 ♀ 7.1 mm, dry mounted (NHM 1847.21).

MATERIAL EXAMINED. — **Gulf of Carpentaria.** Australia, 10°27.6'S, 137°42'E, 49 m, 13.XII.1991, 1 ♀ ovi damaged (QM w17394). — Holothuria reef, *Penguin*, 97 m, 1 ♀ 10.3 mm (NHM 92.3.26.19).

**Batjulmati Reef.** Java, Indonesia, *Siboga*, stn 7, 7°55.5'S, 114°26'E, 15 m, 11.III.1899, 1 ♂ 6.8 mm (ZMA).

**Galewo Strait.** Off Salawatti Island, *Siboga*, stn 164, 1°42.5'S, 130°47.5'E, 32 m, 20.VIII.1899, 2 ♂♂ 6.7, 5.1 mm, 1 ♀ ovi 10.5 mm (ZMA).

**Nuhu Jaan.** Kei Island, *Siboga*, stn 260, 5°36.5'S, 132°55.2'E, 90 m, 1 ♂ 9.5 mm, 1 ♀ 10.9 mm (ZMA).

DISTRIBUTION. — South China Sea, Indonesia, Australia, 15-97 m.

#### DESCRIPTION

Dorsal surface of carapace set with fungiform granules. Frontal lobes tumid, anterior margin shallow arch, sinuous. Margin of carapace bearing 11 subequal, granulate denticles: three close-

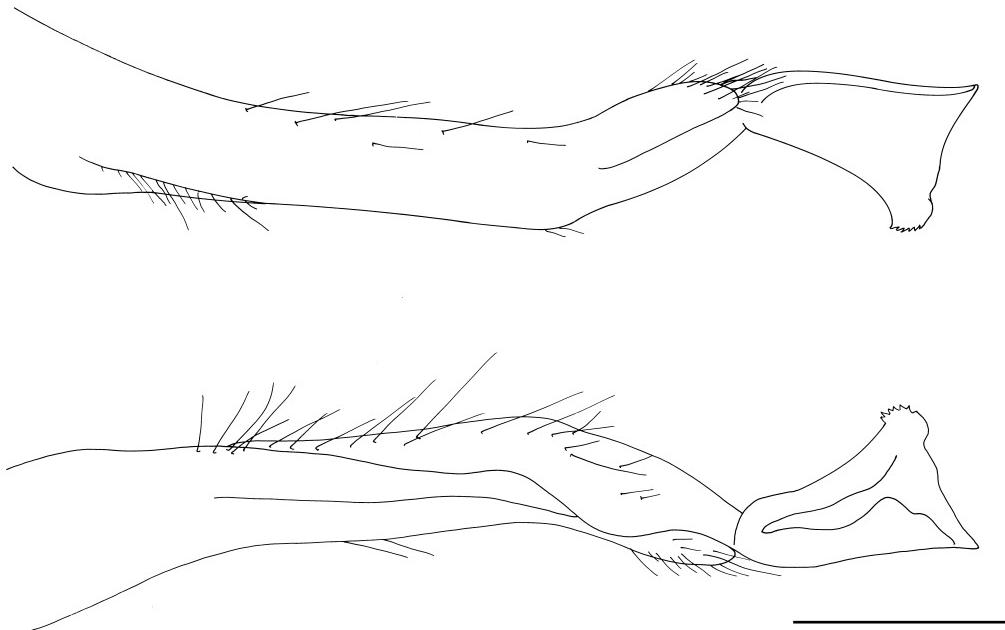


FIG. 2. — *Raylilia coniculifera* n. gen. n. sp., 1 ♂ 9.8 mm, New Caledonia, Lagoon, 22°18.15'S, 166°29.5'E (MNHN B19169), holotype, first male pleopod. Scale bar: 1 mm.

set denticles on midlateral, posterior margin; single denticle on subhepatic. Dorsal surface of carapace bearing 17 conical, prominently granulate tubercles. Hepatic tubercle dorsoventrally flattened, pointing distad. Anterior intestinal tubercle smaller than posterior one.

Anterior margin of efferent branchial channel unisutured, interior lobe medially notched. Third maxilliped bearing fungiform granules.

Chelipeds merus in adult male nearly as long as carapace, thickly set with rounded granules; carpus, propodus minutely granulate. Pereiopods granulate. Sternites closely set with rounded granules. Abdominal segments granulate. Male first pleopod with basal stalk stout, internal flange triangular, disto-external appendix slender; anterior margin of flared tip sinuous, obliquely-cut.

#### REMARKS

*Raylilia gracilipes* differs from its congeners in having the carapace covered in fungiform granules, and the distal margin of first male pleopod obliquely cut.

During the voyage of the *Samarang*, Adams collected several specimens "on the coast of Borneo in twenty-four fathoms", identified only as *Arcaniae* (Adams & White 1848: 53). The label of the specimen of *Arcania gracilipes*, preserved in the Natural History Museum, London (NHM 1847.21), identifies it as collected by A. Adams, off Borneo. Bell's descriptions of *Arcania gracilipes* (Bell 1855a: 367, 1855b: 310, pl. 34, fig. 9, 1855c: 21) are too brief and his figure inaccurate. However, examination of the type specimen shows the characteristic fungiform granules and tridenticulate posterior margin. Calman (1900: 28) referred his specimen "with some doubt to this species [*A. gracilipes*]" and listed the characters that distinguish it from "Bell's type specimen". Examination of Calman's specimen showed it to be *R. mirabilis* (see below). Alcock (1896: 270) described his *A. gracilipes* with carapace "closely covered with flat discoidal granules" – a description fitting all three species of *Raylilia* n. gen. but *R. gracilipes*. Chen's (1996: fig. 12) illustration clearly depicts the specimen

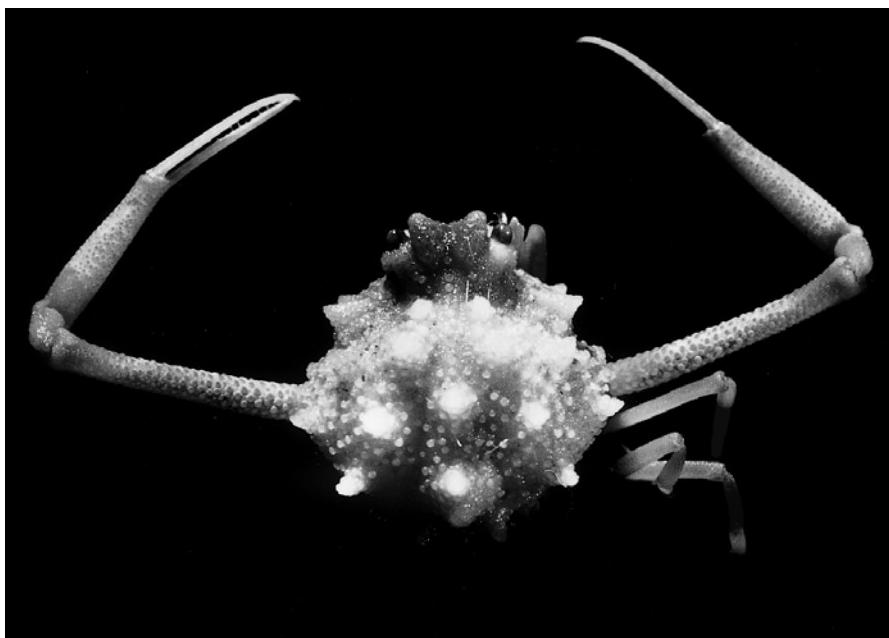


FIG. 3. — *Raylilia gracilipes* (Bell, 1855), 1 ♂ 6.7 mm, Galewo Strait, off Salawatti Island, Siboga, stn 164, 1°42.5'S, 130°47.5'E (ZMA), dorsal view.

as possessing three, rather than the two midlateral marginal denticles characteristic of *R. mirabilis*. Though misidentifying the species, Chen (1996: 283) recognized it as differing from *Randallia*, named it *Zarenkovia mirabilis*, and attributed the authorship of the new genus to "Chen & Türkay, 1995". This paper was never published (M. Türkay pers. comm.), therefore *Zarenkovia* is a *nomen nudum*.

#### *Raylilia mirabilis* (Zarenkov, 1969) (Figs 5; 6)

*Arcania gracilipes* — Calman 1900: 28.

*Randallia mirabilis* Zarenkov, 1969: 24, fig. 8. — Serène & Soh 1976: 13. — Richer de Forges 1983: 634.

*Arcania mirabilis* — Ovaere 1989: 100.

not *Zarenkovia mirabilis* — Chen 1996: 283, fig. 12 [= *R. gracilipes*].

TYPE MATERIAL. — Holotype, SW Hainan Island, South China Sea, Shirshov Institute, Moscow, 1 ♂ 12.5 mm. Paratypes, 1 ♂ 7.1 mm, 1 ♀ 5.0 mm.

MATERIAL EXAMINED. — **Wallis Island**. MUSORSTOM 7, 13°18'S, 176°08'W, 46 m, 15.V.1992, 1 ♂ 6.6 mm (MNHN).

**North Lagoon**. New Caledonia, stn DW 1094, 19°54.4'S, 163°41.2'E, 26 m, 24.X.1989, 1 ♂ 7.3 mm, 1 ♀ 7.3 mm, 1 ♀ ovi 10.0 mm (MNHN). — Stn DW 1097, 19°51.7'S, 163°42.5'E, 34 m, 24.X.1989, 1 juv. (MNHN). — Stn DW 1134, 19°31.3'S, 163°34.6'E, 40 m, 26.X.1989, 1 ♀ ovi 10.5 mm (MNHN). — Stn DW 1205, 19°41.6'S, 163°25.6'E, 38 m, 2.XI.1989, 1 ♂ 7.3 mm (MNHN).

**Noumea**. New Caledonia, CHALCAL 1, stn D 15, 19°23.30'S, 158°38.60'E, 65 m, 16.VII.1984, 1 ♂ 7.8 mm, 1 ovi 9.7 mm (MNHN B21254). — Stn D 52, 21°13.40'S, 158°49.20'E, 69 m, 24.VII.1984, 1 ♂ 6.8 mm, 1 ♀ ovi 10.4 mm (MNHN B21253).

**Chesterfield Island**. CHALCAL 1, stn DC 53, 21°19.50'S, 158°55.30'E, 60 m, 24.VII.1984, 4 ♂♂ 6.7-8.3 mm, 2 ♀♀ 10.0 mm, 10.2 mm, 4 ♀♀ ovi 8.8-11.5 mm (MNHN Na27539). — CORAIL 2, stn DW 9, 20°53'S, 161°35.32'E, 62 m, 28.VII.1988, 1 ♀ ovi 9.5 mm (MNHN). — Stn DW 19, 20°41.72'S, 161°00.17'E, 77 m, 21.VII.1988, 3 ♂♂ 6.7-6.9 mm, 3 ♀♀ 7.2-9.8 mm (MNHN). — Stn DW 21, 20°36.14'S, 161°01.75'E, 86-66 m, 22.VII.1988, 1 ♂ 7.2 mm, 2 ♀♀ 6.6, 8.9 mm (MNHN). — Stn DW 34, 19°21.62'S, 158°55.77'E, 47 m, 23.VII.1988, 1 ♂ 6.6 mm (MNHN). — Stn DW 39, 19°21.55'S, 158°38.83'E, 63 m, 23.VII.1988, 1 ♂ 7.8 mm (MNHN). — Stn DW 43, 19°21.49'S, 158°25.98'E,

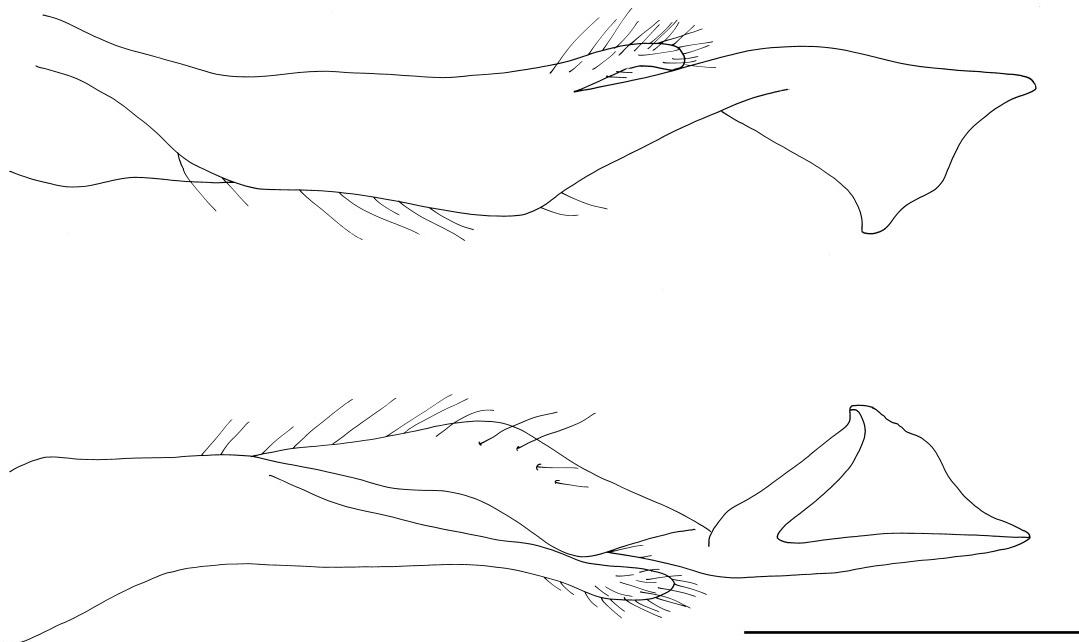


FIG. 4. — *Rayillia gracilipes* (Bell, 1855), 1 ♂ 6.7 mm, Galewo Strait, off Salawatti I., Siboga, stn 164, 1°42.5'S, 130°47.5'E (ZMA), first male pleopod. Scale bar: 1 mm.

52 m, 23.VII.1988, 2 ♂♂ 6.5, 6.7 mm (MNHN). — Stn DW 63, 19°15.15'S, 158°47.73'E, 71 m, 24.VIII.1988, 1 ♂ 6.7 mm, 2 ♀♀ 6.7, 9.1 mm (MNHN). — Stn DW 67, 19°14.92'S, 158°36.94'E, 66 m, 24.VIII.1988, 1 ♂ 6.2 mm (MNHN). — Stn DW 71, 19°15.37'S, 158°24.37'E, 55 m, 25.VIII.1988, 1 ♀ ovi 9.7 mm (MNHN). — Stn DW 80, 19°11.98'S, 158°47.1'E, 66 m, 25.VIII.1988, 1 ♀ 9.0 mm (MNHN). — Stn DW 93, 19°85.92'S, 158°53'E, 58-60 m, 27.VIII.1988, 1 ♂ 6.8 mm, 1 ♀ 6.2 mm (MNHN). — Stn DW 96, 19°06'S, 158°41.92'E, 41 m, 27.VIII.1988, 1 ♀ ovi 9.1 mm (MNHN). — Stn DW 108, 19°09.08'S, 158°49.10'E, 68 m, 27.VIII.1988, 2 ♀♀ 6.7 mm, 9.0 mm (MNHN). — Stn DW 109, 19°08.97'S, 158°52.50'E, 47-64 m, 28.VIII.1988, 2 ♂♂ 6.6 mm, 6.9 mm, 1 ♀ 6.4 mm (MNHN). — Stn DW 120, 19°24.97'S, 158°21.59'E, 56 m, 29.VIII.1988, 1 ♂ 6.4 mm, 1 ♀ ovi 9.3 mm (MNHN). — Stn DW 123, 19°28.31'S, 158°19.27'E, 56 m, 29.VIII.1988, 1 ♀ ovi 9.5 mm (MNHN). — Stn DW 125, 19°28.05'S, 158°24.39'E, 54 m, 29.VIII.1988, 2 ♂♂ 6.7 mm, 7.0 mm (MNHN). — Stn DW 164, 19°41.48'S, 150°18.79'E, 58 m, 2.IX.1988, 1 ♂ 6.5 mm (MNHN).

**Landsdowne-Cairway reef.** CHALCAL 1, stn D 10, 20°36.09'S, 161°05.82'E, 87 m, 12-31.VII.1984, 2 ♂♂ 7.8, 6.8 mm, 1 ♀ 6.7 mm, 1 ♀ ovi 9.8 mm (MNHN).

**Chesterfield-Bellona Plateau.** CHALCAL 1, stn CP 15, 21°24.90'S, 159°09.30'E, 60 m, 12-31.VII.1984,

1 ♀ ovi 8.8 mm (MNHN B21125). — Stn D 28, 19°24.18'S, 158°31.40'E, 51 m, 12-31.VII.1984, 1 ♂ 6.4 mm (MNHN B19234). — Stn D 40 20°31.70'S, 158°50.90'E, 65 m, 23.VII.1984, 2 ♀♀ 7.0 mm, 9.5 mm (MNHN B21252). — Stn D 43, 20°41.50'S, 158°38.40'E, 78 m, 1984, 1 ♂ 7.3 mm, 2 ♀♀ 6.9 mm, 10.4 mm (MNHN Na27538). — Stn D 47, 20°50.85'S, 158°36.03'E, 70 m, 12-31.VII.1984, 1 ♂ 6.5 mm (MNHN B21294). — Stn D 49, 20°58.20'S, 158°35'E, 48 m, 12-31.VII.1984, 1 ♂ 6.7 mm, 1 ♀ ovi 9.4 mm (MNHN B18427). — Stn D 54, 21°25.90'S, 158°59.50'E, 36-42 m, 12-31.VII.1984, 1 ♀ 11.0 mm (MNHN B19165). — Stn D 56, 21°24.40'S, 159°08.80'E, 60 m, 12-31.VII.1984, 1 ♂ 8.6 mm, 1 ♀ 11.7 mm, 1 ♀ ovi 9.7 mm (MNHN B21140). — Stn D 57, 21°29.50'S, 159°16.40'E, 62 m, 12-31.VII.1984, 2 ♂♂ 7.7 mm, 6.6 mm (MNHN B18424).

**Macclesfield Bank.** South China Sea, *Egeria*, 84 m, coll. Bassett-Smith, 1 ♂ 6.9 mm (NHM 93.11.3.210).

**Flinders Entrance.** Torres Straits, 36-55 m, coll. A. C. Haddon, id. W.T. Calman as *Arcania gracilipes*, 1 ♂ 6.4 mm (NHM 1954.9.14.102).

**Anima Sola Island.** Philippines, Albatross, stn 5218, 13°11.15'N, 123°02.45'E, 37 m, 22.IV.1908, 1 ♀ 9.1 mm (USNM).

**DISTRIBUTION.** — New Caledonia, Chesterfield Island, South China Sea, Torres Straits, New Guinea, Phillipines, 26-87 m.



FIG. 5. — *Raylilia mirabilis* (Zarenkov, 1969), 1 ♀ ovi 9.1 mm, Chesterfield Island, 19°06'S, 158°41.92'E (MNHN), dorsal view.

#### DESCRIPTION

Dorsal surface of carapace paved with flat-topped granules. Frontal lobes tumid, anterior margin U-shaped. Margin of carapace bearing nine small, obtuse, granulate denticles: three denticles on posterior margin, two on midlateral margin, single denticle on subhepatic margin, subhepatic denticle largest. Dorsal surface of carapace bearing 14 obtuse tubercles, some indistinct in adult females. Hepatic tubercle somewhat dorsoventrally flattened, pointing distad. Branchial tubercles as prominent as intestinal tubercle. Single intestinal tubercle massive, rounded, anteriorly tumescent.

Anterior margin of efferent branchial channel unisutured, margin of interior lobe entire. Third maxilliped bearing flat-topped granules.

Chelipeds merus in adult male longer than carapace, thickly set with rounded granules; carpus, propodus minutely granulate. Pereiopods minutely granulate.

Plastron with shallow rounded projections laterally. Sternites closely set with rounded granules. Abdominal segments granulate.

Male first pleopod with basal stalk stout, internal flange rounded, disto-external appendix short; distally trilobate, distal margin of proximal lobe minutely denticulate.

#### REMARKS

*R. mirabilis* differs from *R. gracilipes* and *R. conicalifera* n. gen. n. sp. in having two, rather than three, midlateral marginal spines, and from *R. uenoi* in having obtuse dorsal tubercles, and distal lobe of first male pleopod trilobate rather than petaloid.

The specimen from Torres Straits that Calman (1900: 28) "referred with some doubt" to *Arcania gracilipes*, proved to belong to *R. mirabilis*. Zarenkov's description and figure (1969: 24, fig. 8) leave no doubt as to the identity of the species. However his suggestion that it is most closely related to *Randallia lanata* Alcock, 1896, is incorrect. Serène & Soh (1976: 13) wrote that *Randallia mirabilis* Zarenkov, 1969 "Obviously [...] belongs to another genus" but refrained from assigning it elsewhere.



FIG. 6. — *Raylilia mirabilis* (Zarenkov, 1969), 1 ♂ 7.8 mm, Chesterfield Island, 19°21'55"S, 158°38'83"E (MNHN), first male pleopod. Scale bar: 1 mm.

*Raylilia uenoi* (Takeda, 1995)  
(Figs 7; 8)

*Arcania uenoi* Takeda, 1995: 151, figs 1; 2.

TYPE MATERIAL. — Ryukyu Island. Ie-Jima Islet, 35 m National Science Museum, Tokyo, 1 ♂ 9.0 mm (NSMT-Cr 11432).

MATERIAL EXAMINED. — Grand Récif Sud. New Caledonia, stn 572, 22°52'S, 167°00'E, 65 m, 17.VII.1985, 1 ♂ 10.5 mm (MNHN).

East Lagoon. Stn 662, 21°44'S, 166°32'E, 50 m, 8.VIII.1986, 1 ♂ broken (MNHN B18384).

Prony Bay. Ouen Island, stn 131, 22°27.9'S, 166°50'E, 38 m, VIII.1984, coll. Richer de Forges, 1 ♀ 15.9 mm (MNHN B18379).

Chesterfield Island. CORAIL 2, stn DW 119, 19°25.3'S, 158°24.60'E, 56 m, 28.VIII.1988, 1 ♂ 8.6 mm (MNHN).

Sulu Archipelago. SW Doc Can Island, Philippines, 21.II.1964, coll. B. R. Wilson, 1 ♀ 12.9 mm (WAM 228-70).

Java. Indonesia, 5°40'S, 106°8'E, 54 m, 28.VII.1922, 1 ♀ ovi 10.7 mm (ZMK).

Madagascar. NW coast, near Nosy Be, 30 m, on madreporean, 17.I.1971, coll. P. Laboute, 1 ♂ 9.3 mm (MNHN B18780).

DISTRIBUTION. — New Caledonia, Chesterfield Island, Ryukyu Island, Philippines, Indonesia, Madagascar, 30-65 m.

#### DESCRIPTION

Dorsal surface of carapace paved with minute, flat-topped granules. Frontal lobes tumid, anterior margin shallow arch. Margin of carapace bearing nine minutely granulate denticles: three denticles on posterior margin, two on midlateral margin, single denticle on subhepatic margin. Dorsal surface of carapace bearing 16 conic tubercles. Hepatic tubercle somewhat dorsoventrally flattened, pointing distad. Mesobranchial tubercle longer than intestinal tubercle, obliquely directed, tip upcurved. Single intestinal tubercle prominent. Anterior margin of efferent branchial channel unisutured, interior lobe medially notched. Third maxilliped bearing flat-topped granules. Cheliped merus in adult male longer than carapace, thickly set with rounded granules; carpus, propodus minutely granulate. Pereiopods minutely granulate.



FIG. 7. — *Raylilia uenoi* (Takeda, 1995), 1 ♂ 10.5 mm, New Caledonia, Grand Récif Sud, 22°52'S, 167°00'E (MNHN), dorsal view.

Sternites closely set with rounded granules. Plastron lacking lateral projections. Abdominal segments minutely granulate.

Male first pleopod with basal stalk slender, internal flange reduced, disto-external appendix minute; anterior margin of distal, petal-shaped tip evenly denticulate.

#### Color

"Entirely whitish" (Takeda 1995: 151).

#### REMARKS

*R. uenoi* differs from *R. gracilipes* and *R. coniculifera* n. gen. n. sp. in having two, rather than three, midlateral marginal spines, and from *R. mirabilis* in having conic dorsal tubercles, and first male pleopod distally petaloid.

Takeda (1995) placed *A. uenoi* "close to *Arcania gracilipes* Bell, 1855 [...] and *A. sagamiensis* Sakai, 1969" and stated that it "has relation also to *A. pulcherrima* (Haswell, 1880)". However, only *R. gracilipes* is congeneric.

#### Acknowledgements

I am grateful to P. Clark, A. Crosnier, P. Davie, D. Eibye-Jacobsen, M. Hewitt, the late R. Manning and D. Platvoet for entrusting me with valuable material from their collections. P. Clark kindly supplied me with photographs of Bell's fragile type specimen. I thank Chen Huilian for the preliminary sorting of the MUSORSTOM leucosiids. Special thanks to the librarians of the American Museum of Natural History, New York. A. Shoob took the photographs, H. Bernard inked the drawings.

#### REFERENCES

- ADAMS A. & WHITE A. 1848. — Crustacea, in *The Zoology of the Voyage of H.M.S. Samarang; under the command of Captain Sir Edward Belcher during the years 1843-1846*. Reeve and Benham, London: 1-66, pls 1-13.  
ALCOCK A. 1896. — Materials for Carcinological Fauna of India. 2: the Brachyura Oxystomata. *Journal of the Asiatic Society of Bengal* 65 (2): 134-296.



FIG. 8. — *Raylilia uenoi* (Takeda, 1995), 1 ♂ 10.5 mm, New Caledonia, Grand Récif Sud, 22°52'S, 167°00'E (MNHN), first male pleopod. Scale bar: 1 mm.

- BELL Th. 1855a. — Horae carcinologicae, or notices of Crustacea. I: a monograph of the Leucosiidae. *Annals and Magazine of Natural History* 16: 361-367.
- BELL Th. 1855b. — Horae carcinologicae, or notices of Crustacea. I: a monograph of the Leucosiidae. *Transactions of the Linnean Society* 21: 277-314, pls 30-34.
- BELL Th. 1855c. — *Catalogue of Crustacea in the Collections of the British Museum*. Part I: Leucosiidae. Taylor and Francis, London, 24 p.
- CALMAN W. T. 1900. — On a collection of Brachyura from Torres Straits. *Transactions of the Linnean Society* 8: 1-50.
- CHEN H. 1996. — The Leucosiidae (Crustacea: Brachyura) from Nansha Islands and adjacent waters, in *Studies on Marine Fauna and Flora and Biogeography of the Nansha Islands and Neighbouring Waters*. Volume 2. Ocean Press, Beijing: 270-309.
- HASWELL W. A. 1880. — Contributions towards a monograph of Australian Leucosiidae. *Proceedings of the Linnean Society of New South Wales* 4 (1): 44-66, pls 5; 6.
- IHLE J. E. W. 1918. — Die Decapoda Brachyura der Siboga-Expedition. III: Oxystomata: Calappidae,
- Leucosiidae, Raninidae. *Siboga Expeditie* 39b2: 1-322.
- OVAERE A. A. 1989. — *Ibleus* gen. nov., a new leucosiid genus (Crustacea, Brachyura). *Bulletin de l'Institut royal des Sciences naturelles de Belgique* 59: 95-100.
- RICHER DE FORGES B. 1983. — *Randallia serenei* (Crustacea, Decapoda, Brachyura), espèce nouvelle de Leucosiidae du Pacifique. *Bulletin du Muséum national d'Histoire naturelle*, Paris 5 (2): 633-640.
- SERÈNE R. 1968. — Prodromus for a check list of the non-planctonic marine fauna of South east Asia. *Singapore National Academy of Science, Special Publication* 1: 1-122.
- SERÈNE R. & SOH C. I. 1976. — Brachyura collected during the Thai-Danish Expedition (1966). *Phuket Marine Biological Center, Research Bulletin* 12: 1-37, pls 1-7.
- TAKEDA M. 1995. — A new leucosiid crab, *Arcania uenoi*, from the Ryukyu Islands. *Special Bulletin of the Japanese Society of Coleopterology* 4: 151-155.
- ZARENKOV N. A. 1969. — Crabs of the family Leucosiidae (subfamilies Ebaliinae and Iliinae) collected in tropical waters of Indian and Pacific oceans. *Nauchnye Doklady Vyshei Shkoly, biologicheskie Nauki, SSSR* 12 (10): 16-26 (in Russian).

Submitted on 23 December 1999;  
accepted on 13 October 2000